9-1-1 Service Planning (chaired by 9-1-1 Project Manager)

- discuss technical and timeframe details of the service implementation
- detail trunk and data base actions required internally
- finalize project activity list, schedules, responsibilities
- define and finalize service orders, release service orders
- define Selective Router translations, provide to CTG
- provide procedural documentation to AEC customer

9-1-1 Implementation (managed by 9-1-1 Project Manager)

- monitor trunking design, install, testing progress against dates
- define and oversee switch translations preparations and install
- prepare and install, train on customer data base input process
- manage individual service component testing
- plan overall testing and turnup of service systems/processes
- coordinate AEC customer activities and schedules

Service Testing

- do initial trunk testing
- do call-through testing according to Test Plan
- correct any problems
- finalize cut to service arrangements

Cut To Service

- activate 9-1-1 service for AEC switch
- initiate billing

Two Week Quality review period

- AEC completes Customer Satisfaction Questionnaire (optional)
- correct any problems, modify any procedures as necessary, jointly agree that AEC 9-1-1 service is in maintenance

6 & E

Ongoing Service Additions

The same basic process, including the Service Alert tool and the Questionnaire, should be used whenever an AEC plans to add service in a new geographic area and/or an additional Selective Router is involved. The result should be that each service interconnection for 9-1-1 is documented on an AEC 9-1-1 Service Questionnaire.

RCH 4/25/96

Ameritech

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Description of Addressing & Routing File (ARF)

This listing consists of the address related data fields from the MSAG, does NOT contain ESNs, and includes a data column for a code indicating the Selective Routing switch that serves the addresses on the street for each line of the file. This listing allows the ALEC to pre-test their 9-1-1 TN records for 9-1-1 valid addressing info, so that the LEC processing of the records will proceed without error generation and delay of ALI updates. The SR indicator code allows the ALEC to know how to properly send the 9-1-1 calls from their originating switch, covering multiple Rate Center areas, to the correct SR for each street name/house number range.

Description of Addressing Reference Listing (ARL)

This listing consists of the address related data fields from the MSAG, but does not include the ESN data field. This listing (which may be provided in mechanized file form) will allow the ALEC to pre-test their 9-1-1 TN records for 9-1-1 valid addressing info, so that the LEC processing of the records will proceed without error generation and delay of ALI updates.

For service areas where a SR switch serves an entire NPA, and there is no question of the target SR, the ARL furnishes all the data needed by the ALEC to support proper TN record provision.

(The ARL, along with the RC-SR spreadsheet described below, may provide the full information set needed, without use of an ARF in NPA areas with multiple SRs. The spreadsheet approach has the added benefit of defining the Selective Router relationship at a much higher level, with less data, by Rate Center rather than at the individual street level.)

Description of Spreadsheet Defining Rate Center to Selective Router
The proposed national standard for this relationship document is defined by the following spreadsheet header layout:

		State: SSSSSSSSS		LEC: LLLLLLLLL	
NPA	NXX	ALEC	Rate Center	SR Name	SR CLLI

Through the use of a spreadsheet structure, the information can be sorted for various uses, such as by:

NPA and NXX
ALEC Name
Rate Center
SR

or any combination of these.

Since ALEC (AEC) service NXXs are assigned by Rate Center, the basic need is for the association between the Rate Center and the associated Selective Routing switch. This allows the ALEC to know how to properly send the 9-1-1 calls from their originating switch, covering multiple Rate Center areas, to the correct SR for each NXX/Rate Center combination.

PAGE

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mmmm dd, 1996 (sample Customer letter)

Ameritech E 9-1-1 Service with New Telephone Companies

Recently you may have seen press coverage on new telephone service providers coming to the area. While these companies will be competing with Ameritech in general telephone services, we are acting in partnership to provide E 9-1-1 service for their future customers.

The xxxxxxxxx company is planning to start telephone services in certain parts of cccccccc County in ddddddddd or ddddddddddd. Their switching unit will direct 9-1-1 calls into the present Ameritech E 9-1-1 network and systems. xxxxxxxxx will provide 9-1-1 customer records to Ameritech for processing into the Ameritech 9-1-1 data bases. ffff llllll, Ameritech 9-1-1 Customer Service Manager, will be acting as Project Manager for the activities required to bring 9-1-1 calling from xxxxxxxxx customers into the cccccccc County 9-1-1 system.

In most ways, 9-1-1 calling service will be unchanged:

- No change in how a 9-1-1 call is made, or received at the PSAP
- No changes in equipment, trunks, or data links
- No change in MSAG management or updates
- No change in 9-1-1 problem reporting procedures

There will be two small impacts on PSAP operations, with two possible additions to the ALI screen content, and infrequent need for the PSAP personnel to contact the new company for emergency support:

- Due to the way in which telephone service will be provided to xxxxxxxxx's new customers, both the new telephone number and the customer's old number will soon appear on the ALI screen. We expect the old number to be labeled 'ALT#'. Also, a code representing the new telephone company will soon be provided on th ALI screen.

- The PSAP may occasionally need to contact the new telephone compan for call traces, line break-in, customer record information, or other emergency actions. The appropriate contact information will be provided to the PSAPs.

Ameritech continues to be your E 9-1-1 service provider and service manager. And, in conjunction with xxxxxxxxx and other future new telephone service providers, the Ameritech 9-1-1 organization continues to focus on quality 9-1-1 emergency calling services.

As work progresses, you will receive other information from Amerite and xxxxxxxxx. If you have any questions, please contact ffff llll on npa-nxx-nnnn.

title - Ameritech 9-1-1 Services

cc: f. llllll Ameritech
n. lllllllllll xxxxxxxxx

PA

Appendix D

Sample
TC Daily Report

Cover + 1 Pages

EXAMPLE : Lotus Notes NDSC DB Update Log
for Transmission File Acceptance

NDSC Database Update Job Record

File Information
Master Account: Ameritech
Update File Recv'd: 11/11/96 08:44:37 PM
Update File Name: XXX314
Seq #: 314
Source Company: XXX Company
Source Company Code: XXX
State: MI
Source System: Default
Record Count: 190
Old Comments:
Posting Started: 11/11/96 08:48:48 PM
Posting Complete: 11/11/96 08:55:37 PM
Records Applied: 139
Records in Error: 51
Processing Comments:

History Information
Entered by: 11/12/96 12:09:26 AM
Last Modified by:

Appendix E

NENA Recommended Formats for Data Exchange

Cover + 17 Pages

June 1993

NENA Recommended Formats For Data Exchange

Contents

1. General

1.1 Purpose

This document sets forth NENA standard formats for Automatic Location Identification (ALI) data exchange between telephone companies and Enhanced 9-1-1 systems.

Movement of ALI data between telephone companies and/or E9-1-1 data base systems is a necessary activity for the activation of E9-1-1 systems. Means of moving such data is varied and many.

1.2 Copyright and Responsibility

This practice was written by the NENA Data Standards Subcommittee. The NENA Executive Board has recommended this practice for industry acceptance and use. For more information about this practice, contact:

Tom Hicks
NENA Standards Committee Chair
214-718-4289

or

Barb Thornburg
NENA Data Standards Subcommittee Chair
612-627-3734

1.3 Disclaimer

This document has been prepared solely for the voluntary use of E9-1-1 service providers, E9-1-1 equipment vendors, and participating telephone companies.

By using this practice, the user agrees that the National Emergency Number Association (NENA) will have no liability for any consequential, incidental, special, or punitive damages that may result.

2. Overview

2.1 Acronyms/ Terms

Acronym/Term	Definition
E9-1-1	Enhanced 9-1-1(name,address, and telephone number displayed)
ALI	Automatic Location Identification
MSAG	Master Street Address Guide
NENA	National Emergency Number Association

2. Overview, continued

2.2 Types of Formats

The NENA Data Standards Subcommittee has established 2 versions of standard data formats for use by data exchange partners when exchanging E9-1-1 data base information. Two versions of standard format have been defined for each of the following:

- ALI data exchange
- MSAG data exchange
- Header and trailer records

Version 1 formats are the original NENA recommended formats utilizing the 240 character format for Data Exchange; 160 character format for MSAG Data Exchange and 160 character format for Header and Trailer records.

Version 2 formats recognize that the original formats needed to be expanded to accommodate additional data fields critical to some data providers and also recognizing that NENA must position the standard record for the future. Version 2 formats contain all data fields resident in Version 1 formats utilizing a 512 character format for Data Exchange; 200 character format for MSAG Data Exchange and 200 character formats for Header and Trailer records.

The NENA Data Standards Subcommittee highly recommends that data providers maintain consistency by utilizing formats consistent to one version. i.e., Header and Trailer records must be the same version format as the Data or MSAG Exchange formats utilized.

2.3 Reasons to Implement

Industry adoption of the standard will:

- Minimize costs incurred in providing E9-1-1 data base services.
- Ensure timely activation of E9-1-1 data base systems.
- Ensure consistent provision of ALI data.
- Enable data compatibility for system integration of E9-1-1 products and services.

2.4 When to Implement

Since many data providers, service providers and equipment vendors are currently working toward utilization of the original Version 1 data formats defined herein, and may decide to implement version 2 formats the Data Standards Subcommitttee recommends that data providers and the respective service provider determine the data format most relevant to the system software being utilized.

A goal of July 1, 1994 is recommended as the date when data providers are capable of sending data utilizing at least one of the format versions and service providers are capable of receiving data in both of the format versions.

It is further understood that many in-service data flows may be unable to conform to the NENA formats by the target date.

2. Overview, continued

2.5 Data Content Considerations

The data formats defined in the following pages provide for a standard field location for data identified by E9-1-1 service providers as necessary to provision their respective data bases. Consideration has been given by the NENA Data Standards Subcommittee to field requirements which are reasonably deemed to be necessary for future database needs in Version 2 standards.

It is understood that most data providers cannot today provide data for all identified fields of either version of the formats. It is also understood that most service providers systems cannot currently utilize all data fields as provided in the 2 formats. Service providers should however document how they utilize the NENA data format versions 1 and 2 and the fields that their software systems can utilize.

The "General Use" field may be used when exchange partners agree to exchange information not defined in the standard.

Further, all data fields should be treated as "left-justified" with trailing spaces. Unused fields should be space-filled.

NENA RECOMMENDED FORMAT FOR DATA EXCHANGE

FIELD NAME	POSITION	BYTES	TYPE	DESCRIPTION
Function Code	1	1	A	Type of activity the record is being submitted for. Valid entries: C Change D Delete I Insert
NPA	2-4	3	N	Three digit area code of the Calling Number.
Calling Number	5-11	7	N	Seven digit telephone number of the Calling Number.
House Number	12-21	10	AN	House number. The field should be space filled if no house number is available.
NOTE:	*Although the House Number field is ten characters, it is understood that telephone companies may only support up to 8 characters.*			
House Number Suffix	22-25	4	AN	House number extension (eg.1/2). The field should be space filled if no suffix applies.
Prefix Directional	26-27	2	A	Leading street direction prefix. The field should be space filled if no prefix applies. Valid entries: N S E W NE NW SE SW
Street Name	28-67	40	AN	Valid service address of the Calling Number.
Street Suffix	68-71	4	A	Valid street abbreviation, as defined by the U. S. Postal Service Publication 28. (eg.AVE)
Post Directional	72-73	2	A	Trailing street direction suffix. The field should be space filled if no suffix applies. Valid entries: N S E W NE NW SE SW
Community Name	74-105	32	A	Valid service community of the street name/house number as designated by the MSAG.

NENA RECOMMENDED FORMAT FOR DATA EXCHANGE

FIELD NAME	POSITION	BYTES	TYPE	DESCRIPTION
State	106-107	2	A	Alpha state abbreviation (eg. TX)
Location	108-127	20	AN	Additional address information (free formatted) describing the exact location of the Calling Number (eg.Apt 718).
Customer Name	128-159	32	AN	Subscriber name associated with the Calling Number.
Class of Service	160	1	AN	Value of: 1=Residence 2=Business 3=ResidencePBX 4=Business PBX 5=Centrex 6=Coin 1W out 7=Coin 2Way 8=Mobile 9=ResidenceOPX 0=Business OPX
Type of Service	161	1	N	Value of: 0=Not FX nor Non-Pub 1=FX in 911 serving area 2=FXoutside 911 serving area 3=Non-Pub 4=Non-Pub FX in 911 serving area 5=Non-Pub FX outside 911 serving area
Exchange	162-165	4	AN	Phone company exchange identifier for the serving telephone office of the customer
ESN	166-170	5	AN	Emergency Service Number associated with the House Number and Street Name.
				NOTE: ESN field may be space filled when the receiving data partner is validating the address. The telephone company providing the E9-1-1 tandem routing will provide a list of ESN's available for assignment.
Main NPA	171-173	3	N	Three digit area code of the Main Number associated with the Calling Number.
Main Number	174-180	7	N	Seven Digit telephone number of the Main Number associated with the Calling Number.
Order Number	181-190	10	AN	Service order number for the activity establishing this record.

NENA RECOMMENDED FORMAT FOR DATA EXCHANGE

FIELD NAME	POSITION	BYTES	TYPE	DESCRIPTION
Extract Date	191-196	6	N	Date on which the record was created in the format...MMDDYY
County ID	197-200	4	AN	County Identification code (usually the FIPS code).
	NOTE: County Identification field is used to identify the county of call origination . The Subcommittee recommends use of the FIPS code assigned to each county by the U S Census Bureau.			
Company ID	201-205	5	AN	Telephone Company Identification code
Source ID	206	1	AN	Code which indicates whether data is part of the initial database creation process or part of the daily update process. Daily=Space, Initial Load=C
Zip Code	207-211	5	AN	Postal Zip Code
Zip +4	212-215	4	AN	Postal Zip Code Extension
General Use	216-226	11	AN	This field will be mutually used by data exchange partners to pass information not defined in previous fields.
Reserved	227-239	13	AN	This field is reserved for the processing telephone company's use.
End of Record	240	1	AN	Always an asterisk (*).

ASSUMPTIONS:

- *All fields are left-justified, with trailing spaces.*
- *The telephone company providing E9-1-1 Tandem routing must provide the governmental entity with a list of ESN's available for assignment by MSAG development personnel.*

NENA RECOMMENDED FORMAT FOR MSAG DATA EXCHANGE

NAME	POSITION	BYTES	TYPE
Prefix Directional	1-2	2	AN
Street Name	3-42	40	AN
Street Suffix	43-46	4	AN
Post Directional	47-48	2	AN
Low Range	49-58	10	AN
High Range	59-68	10	AN
Community Name	69-100	32	A
State	101-102	2	A
Odd/Even	103	1	O,E,or B
ESN	104-108	5	AN
Extract Date	109-114	6	MMDDYY
PSAP ID	115-118	4	AN
County ID	119-122	4	AN
Exchange	123-126	4	AN
General Use	127-146	20	AN
Reserved	147-159	13	AN
End of Record	160	1	Always"*"

NOTE: All fields are left-justified, with trailing spaces.

NENA RECOMMENDED HEADER FORMAT FOR DATA EXCHANGE

NAME	POSITION	BYTES	TYPE
Header Indicator	1-5	5	"UHL"
Extract Date	6-11	6	MMDDYY
Company Name	12-61	50	AN
Cycle Counter	62-67	6	N
County ID	68-71	4	AN
State	72-73	2	A
General Use	74-93	20	AN
Reserved	94-159	66	AN
End of Record	160	1	Always"*"

NOTE: All fields are left-justified, with trailing spaces, except the Cycle Counter, this field will be right-justified with leading spaces.

Header records will employ cycle counting to ensure a cycle of updates is not missed.

When used with an ALI data file, the Reserved field will be expanded to 145 bytes.

NENA RECOMMENDED TRAILER FORMAT FOR DATA EXCHANGE

NAME	POSITION	BYTES	TYPE
Trailer Indicator	1-5	5	"UTL"
Extract Date	6-11	6	MMDDYY
Company Name	12-61	50	AN
Record Count	62-70	9	N
Reserved	71-159	89	AN
End of Record	160	1	Always"*"

NOTE: All fields are left-justified, with trailing spaces, except for the Record Count, this field will be right-justified with leading spaces.

Trailer records will employ record counting to ensure a record within an update file is not missed.

When used with an ALI data file, the Reserved field will be expanded to 168 bytes.

NENA RECOMMENDED FORMAT FOR DATA EXCHANGE

FIELD NAME	POSITION	BYTES	TYPE	DESCRIPTION
Function Code	1	1	A	Type of activity the record is being submitted for. Valid entries: C Change D Delete I Insert
NPA	2-4	3	N	Three digit area code of the Calling Number.
Calling Number	5-11	7	N	Seven digit telephone number of the Calling Number.
House Number	12-21	10	AN	House number. The field should be space filled if no house number is available.
NOTE:	*Although the House Number field is ten characters, it is understood that telephone companies may only support up to 8 characters.*			
House Number Suffix	22-25	4	AN	House number extension (eg.1/2). The field should be space filled if no suffix applies.
Prefix Directional	26-27	2	A	Leading street direction prefix. The field should be space filled if no prefix applies. Valid entries: N S E W NE NW SE SW
Street Name	28-87	60	AN	Valid service address of the Calling Number.
Street Suffix	88-91	4	A	Valid street abbreviation, as defined by the U. S. Postal Service Publication 28. (eg.AVE)
Post Directional	92-93	2	A	Trailing street direction suffix. The field should be space filled if no suffix applies. Valid entries: N S E W NE NW SE SW
Community Name	94-125	32	A	Valid service community of the street name/house number as designated by the MSAG.

NENA RECOMMENDED FORMAT FOR DATA EXCHANGE

FIELD NAME	POSITION	BYTES	TYPE	DESCRIPTION
State	126-127	2	A	Alpha state abbreviation (eg. TX)
Location	128-187	60	AN	Additional address information (free formatted) describing the exact location of the Calling Number (eg.Apt 718).
Customer Name	188-219	32	AN	Subscriber name associated with the Calling Number.
Class of Service	220	1	AN	Value of: 1=Residence 2=Business 3=ResidencePBX 4=Business PBX 5=Centrex 6=Coin 1W out 7=Coin 2Way 8=Mobile 9=ResidenceOPX 0=Business OPX
Type of Service	221	1	N	Value of: 0=Not FX nor Non-Pub 1=FX in 911 serving area 2=FXoutside 911 serving area 3=Non-Pub 4=Non-Pub FX in 911 serving area 5=Non-Pub FX outside 911 serving area
Exchange	222-225	4	AN	Phone company exchange identifier for the serving telephone office of the customer
ESN	226-230	5	AN	Emergency Service Number associated with the House Number and Street Name.

NOTE: ESN field may be space filled when the receiving data partner is validating the address. The telephone company providing the E9-1-1 tandem routing will provide a list of ESN's available for assignment.

Main NPA	231-233	3	N	Three digit area code of the Main Number associated with the Calling Number.
Main Number	234-240	7	N	Seven Digit telephone number of the Main Number associated with the Calling Number.
Order Number	241-250	10	AN	Service order number for the activity establishing this record.

NENA RECOMMENDED FORMAT FOR DATA EXCHANGE

FIELD NAME	POSITION	BYTES	TYPE	DESCRIPTION
Extract Date	251-256	6	N	Date on which the record was created in the format...MMDDYY
County ID	257-260	4	AN	County identification code (usually the FIPS code).

NOTE: County Identification field is used to identify the county of call origination . The Subcommittee recommends use of the FIPS code assigned to each county by the U S Census Bureau.

Company ID	261-265	5	AN	Telephone Company identification code
Source ID	266	1	AN	Code which indicates whether data is part of the initial database creation process or part of the daily update process. Daily=Space, Initial Load=C
Zip Code	267-271	5	AN	Postal Zip Code
Zip +4	272-275	4	AN	Postal Zip Code Extension
General Use	276-286	11	AN	This field will be mutually used by data exchange partners to pass information not defined in previous fields.
Customer Code	287-289	3	AN	Code used to uniquely identify a customer
Comments	290-319	30	AN	Optional notes, may be displayed at PSAP
X Coordinate	320-328	9	AN	Longitude/ X coordinate
Y Coordinate	329-337	9	AN	Latitude/ Y coordinate
Z Coordinate	338-342	5	AN	Structure elevation
Cell ID	343-348	6	AN	Identification number indicating a geographic region of cellular coverage
Sector ID	349	1	AN	Sub set/section of a cell.

NENA RECOMMENDED FORMAT FOR DATA EXCHANGE

POSITION	BYTES	TYPE	DESCRIPTION	PE
				N
350-355	6	AN	Taxing Area Rate Code	N
356-511	156	AN	This field is reserved for the processing telephone company's use.	N
512	1	AN	Always an asterisk (*).	N
				N
				N

OTE: *All fields are left-justified, with trailing spaces.*

The telephone company providing E9-1-1 Tandem routing must provide the governmental entity with a list of ESN's available for assignment by MSAG development personnel.

The NENA Technical Committee is pursuing a recommended standard for X-Y-Z Coordinates.

NENA RECOMMENDED HEADER FORMAT FOR DATA EXCHANGE

NAME	POSITION	BYTES	TYPE
Header Indicator	1-5	5	"UHL"
Extract Date	6-11	6	MMDDYY
Company Name	12-61	50	AN
Cycle Counter	62-67	6	N
County ID	68-71	4	AN
State	72-73	2	A
General Use	74-93	20	AN
Release Number	94-96	3	N
Format Version	97	1	N
Reserved	98-199	102	AN
End of Record	200	1	Always"*"

NOTE: All fields are left-justified,with trailing spaces, except the Cycle Counter, this field will be right-justified with leading spaces.

Header records will employ cycle counting to ensure a cycle of updates is not is missed.

When used with an ALI data file, the Reserved field will be expanded to 414 bytes.

NENA RECOMMENDED TRAILER FORMAT FOR DATA EXCHANGE

NAME	POSITION	BYTES	TYPE
Trailer Indicator	1-5	5	"UTL"
Extract Date	6-11	6	MMDDYY
Company Name	12-61	50	AN
Record Count	62-70	9	N
Reserved	71-199	129	AN
End of Record	200	1	Always"*"

NOTE: All fields are left-justified,with trailing spaces, except for the Record Count, this field will be right-justified with leading spaces.

Trailer records will employ record counting to ensure a record within an update file is not missed.

When used with an ALI data file, the Reserved field will be expanded to 441 bytes.

Appendix F

Resale Situation Resolution

Cover + 1 Pages

9-1-1 Database Integrity

Resale Situation Resolution

In a reseller situation, Ameritech enters the TC's end-user's name and address into the 9-1-1 database via Ameritech's service order system based on input obtained when the TC places the order. This is accomplished as part of the service order process based on input obtained when the reseller places the order for service. Special Field Identifiers (FIDs) are used to signify the order as a resold service. The Different Premise Service (DPS) and Different Premise Address (DPA) FIDs are used to store and transport this information in Ameritech's service order process; the reseller must provide the end-user data (name and address information) at the time of placing an Order.

Ameritech discovered two situations centered around processes used to complete service orders that affected how data was flowing into the 9-1-1 database.

The first was the actual sequence in which orders are processed. If you have a service order that is a T&F (in & out), the F (or out) service order must be processed first, then the T (or in) portion of the service order will insert the proper address in the database. There were no edits in place to make sure that the proper sequence was followed.

Ameritech has since recognized this processing error and is currently developing a data check in the processing of the service orders. This sequencing FID will be in place by the end of January, 1997. Until that software fix is in place, Ameritech is using a manual check to insure proper sequencing of T&F service orders.

The second process situation related to methods and procedures (M&P) centered around service order writing and input into the service order system. The initial problem was the way in which the service representative was actually placing the name, address and phone number into the service order system. If there was a main address with several subsequent service addresses and phone numbers, the main service address and phone number on an order should not have been reentered to change subsequent addresses and phone numbers. If that took place, then the entire account would be changed to the main address and phone number. This was corrected with retraining and the problem has been evaluated on several occasions to verify this change has taken place.